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The two sides of the use of supported ionic liquids (SILs) materials

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Solid-phase extraction (SPE) is used for purification and removal techniques for target molecules in liquid extracts. In recent years, the introduction of ionic liquids (ILs) in SPE, have emerged as SILs materials and considering their characteristics[1] SILs can be excellent adsorbents of a wide range of bioactive compounds, ranging from small organic compounds to complex molecules like antibodies (Abs). Despite the studies that have already been carried out, that prove their role in the extraction and purification of proteins[2], there are no indications regarding their performance when applied to Abs. However, it seems to be a viable and sustainable strategy to be used in the downstream processing of Abs. Also, these materials could have the ability to adsorb and remove emerging contaminants that are not being successfully removed from wastewaters by conventional treatment systems. In this work three SILs materials were synthesized and used in IgG purification and in adsorption studies of a pesticide (imidacloprid) from aqueous solutions, being $SilPrN(C_8)_3Cl$ the more promising SIL for both applications. The development of a new platform such as SILs, showed tremendous potential for the purification of IgG and removal of imidacloprid from water, thus this technique appears to be a viable option for the downstream processing of Abs and to be applied as a filter for the elimination of pesticides from wastewaters.
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Keywords: SILs, IgG purification, pesticide removal

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2. Song, H. et al. RSC Adv 6, (2016).